

Abstract of the Disclosure

The determination of the three-dimensional orientation of a body relative to two horizontal reference directions with increased accuracy is performed by an inclinometer-based elevation measurement device which has at least three, and preferably eight individual inclinometers. The individual inclinometers are positioned relative to a housing of the measurement device in such a manner that they point in different directions in space and each combination of three individual inclinometers combines to form a triad for computationally determining the measured orientation values of the body in a first step. Thereafter, in second step, the measured orientation values are combined in a weighted or unweighted form to produce an overall measured value of the body having substantially higher precision.